

REMARKS

The Office Action mailed June 2, 2005, has been received and reviewed. Claims 1 through 44 are currently pending in the application. Claims 1 through 44 stand rejected. Applicants have amended claims 17, 24, and 26, merely to enhance grammar (claim 17) and to improve antecedent basis (claims 24 and 26), the scope of the claims remaining the same, and respectfully request reconsideration of the application as amended herein.

35 U.S.C. § 102(b) Anticipation Rejections

Anticipation Rejection Based on U.S. Patent No. 3,528,002 to Dunlavey

Claims 1 through 14, 16 through 21, 24 through 28 and 30 through 44 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Dunlavey (U.S. Patent No. 3,528,002). Applicants respectfully traverse this rejection, as hereinafter set forth.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Dunlavey describes measuring the thickness of a moving web of sheet material by two elements of an electromagnetic transducer. Each element is maintained at uniform distance from the sheet. That distance is defined by maintaining a continuous air film between the sheet material and the working face of the transducer element (Col. 1, lines 57-63) The two mutually spaced elements produce a signal representing their spacing. (Col. 1, lines 54-57) An object of the invention is to permit accurate measurement of the sheet material without actually touching either surface of the sheet. Any contact with moving sheet material tends to mark the surface. (Col. 1, lines 39-44)

Claim 1 recites an apparatus comprising: a first linear measuring device including a first movable caliper finger disposed on one side of the plane for *measuring a first linear distance from a common zero point location to the first surface of the substrate* along an axis substantially normal to the first and second surfaces; a second linear measuring device including a second

movable caliper finger disposed on an opposing side of the plane for *measuring a second linear distance from the common zero point location to the second surface of the substrate* along the axis generally normal to the first and second surfaces, *the common zero point location being a location of the end of the first linear measuring device wherein the end of the first linear measuring device is in axial contact with an end of the second linear measuring device.*
(Emphasis added)

Dunlavey fails to disclose measuring linear distances from a common zero point location to surfaces of a substrate, the common zero point location being a location of the end of a first linear measuring device wherein the end of the first linear measuring device is in axial contact with an end of a second linear measuring device. Dunlavey does not describe a common zero point location, nor does Dunlavey disclose an apparatus for measuring a distance from such a common zero point location to a surface of the substrate. Rather, Dunlavey discloses maintaining transducer elements at uniform distance from a sheet, and producing a signal representing their spacing. An intervening air film is used to maintain the uniform distances. For a given air supply pressure and a given biasing force to be supported, the resulting air flow maintains a definite and uniform spacing between edge 104 and the web. (Col. 5, lines 35-39) The uniform spacing includes no common zero point location, rather the distance from a first transducer element to a first surface of the sheet is maintained, and the distance from a second transducer element to a second surface of the sheet is maintained. A signal representing the spacing from the first transducer element and the second transducer element is additionally produced. The uniform distance from each transducer element to the surface of the sheet and the total spacing between the two transducer elements are used to determine the thickness of the sheet. Accordingly, Dunlavey fails to describe each and every element of claim 1. Therefore, it is respectfully submitted that the rejection to claim 1 should be withdrawn.

Claims 2-14 and 16 are each allowable, among other reasons, as depending from claim 1 which should be allowed.

Claim 2 is additionally allowable as Dunlavey does not disclose movable caliper fingers each including terminal contact members at the ends thereof for contacting the respective first and second surfaces of a substantially planar substrate. Rather, Dunlavey describes measurement of a sheet material without actually touching either surface of the sheet.

Claim 3 is additionally allowable as Dunlavey does not disclose linear measuring devices

are configured to provide a zero point value corresponding to the common zero point location in the form of a linear distance for each of the first and second movable caliper fingers. Dunlavey does not disclose an apparatus utilizing a common zero point location in any manner.

Claim 10 is further allowable as Dunlavey does not disclose a calculation device configured to determine at least one warpage characteristic of a substantially planar substrate from at least some of the measurements at the at least three different locations.

Claim 12 is further allowable as Dunlavey does not disclose a calculation device configured to determine at least one warpage characteristic of a substantially planar substrate.

Claim 13 is additionally allowable as Dunlavey does not disclose a carrier configured to move the substantially planar substrate continuously between the first and second movable caliper fingers *while in contact therewith*.

Claim 14 is further allowable as Dunlavey does not disclose a calculation device configured to determine at least one warpage characteristic of a substantially planar substrate.

Independent claim 17 recites an apparatus comprising: at least one complementary set of linear measuring devices, wherein the at least one complementary set of linear measuring devices is configured to define *a common zero point location at a location of mutual contact between contact members of the first and second coaxial, opposing, movable caliper fingers*, to provide a corresponding zero point value as a linear distance for each movable caliper finger, and to *provide displacement values for each movable caliper finger when displaced away from the common zero point location*. (Emphasis added)

As described hereinabove with respect to independent claim 1, Dunlavey does not describe devices configured to define a common zero point location at a location of mutual contact between contact members of the first and second coaxial, opposing, movable caliper fingers. Further, Dunlavey does not describe an apparatus providing displacement values for each movable caliper finger when displaced away from the common zero point location. Accordingly, Dunlavey fails to describe each and every element of claim 17. Therefore, it is respectfully submitted that the rejection to claim 17 should be withdrawn.

Claims 18-21, 24-28, and 30-31 are each allowable, among other reasons, as depending from claim 17 which should be allowed.

Claim 20 is additionally allowable as Dunlavey fails to describe a robotic gripper.

Claim 26 is further allowable as Dunlavey does not disclose a device configured to determine at least one warpage characteristic of a substrate.

Claim 27 is further allowable as Dunlavey does not disclose a carrier configured to move the substantially planar substrate continuously between the movable caliper fingers while in contact therewith.

Claim 28 is further allowable as Dunlavey does not disclose a device configured to determine at least one warpage characteristic of a substrate.

Independent claim 32 recites a method for determining at least one dimensional value of a substantially planar substrate, comprising: establishing a plane parallel to which a substantially planar substrate having a first substantially planar side and a second, opposing, substantially planar side is to be disposed; establishing *a common zero point location* in or immediately adjacent the plane from which first and second linear distances perpendicular to the plane may be measured; placing the substantially planar substrate parallel to the plane and with *the common zero point location located within the substantially planar substrate*; measuring the first linear distance *from the common zero point location to the first substantially planar side* of the substantially planar substrate in at least one location along the substantially planar substrate; and measuring the second linear distance *from the common zero point location to the second, opposing, substantially planar side* of the substantially planar substrate in the least one location along the substantially planar substrate.

Dunlavey fails to describe placing a substrate with a common zero point location located within the substrate, measuring a first linear distance from the common zero point location to a first side of the substrate, and measuring a second linear distance from the common zero point location to a second, opposing side of the substrate. Rather, Dunlavey describes maintaining transducer elements at uniform distance from a sheet, and producing a signal representing their spacing. The uniform spacing includes no common zero point location, rather the distance from a first transducer element to a first surface of the sheet is maintained, and the distance from a second transducer element to a second surface of the sheet is maintained. A signal representing the spacing from the first transducer element and the second transducer element is additionally produced. The uniform distances and the spacing between the transducer elements are used to determine the thickness of the sheet. Accordingly, Dunlavey fails to describe each and every element of claim 32. Therefore, it is respectfully submitted that the rejection to claim 32 should be withdrawn.

Claims 33-44 are each allowable, among other reasons, as depending from claim 32 which should be allowed.

Claim 33 is further allowable as Dunlavey does not disclose determining a thickness of the substantially planar substrate by adding the measured first and second linear distances.

Claim 35 is further allowable as Dunlavey does not disclose determining any warpage of a substantially planar substrate.

Claim 36 is further allowable as Dunlavey does not disclose determining any warpage of a substantially planar substrate.

Claim 41 is further allowable as Dunlavey does not disclose elements in contact with the opposing sides of a substantially planar substrate.

Claim 42 is further allowable as Dunlavey does not disclose establishing a zero point location as a location of mutual contact of the first and second opposing elements without interposition of the substantially planar substrate therebetween.

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on U.S. Patent No. 3,528,002 to Dunlavey

Claims 30 and 31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Dunlavey (U.S. Patent No. 3,528,002). Applicants respectfully traverse this rejection, as hereinafter set forth.

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

The 35 U.S.C. § 103(a) obviousness rejections of claims 30 and 31 are improper because the nonobviousness of independent claim 17 precludes a rejection of claims 30 and 31 which

depend therefrom because a dependent claim is obvious only if the independent claim from which it depends is obvious. *See In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also* MPEP § 2143.03. Therefore, the Applicants request that the Examiner withdraw the 35 U.S.C. § 103(a) obviousness rejection to dependent claims 30 and 31 which depend from allowable independent claim 17.

Obviousness Rejection Based on U.S. Patent No. 3,528,002 to Dunlavey in view of U.S. Patent No. 6,242,926 to Gardopée et al.

Claims 15, 19, and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Dunlavey (U.S. Patent No. 3,528,002) in view of Gardopée et al. (U.S. Patent No. 6,242,926). Applicants respectfully traverse this rejection, as hereinafter set forth.

The 35 U.S.C. § 103(a) obviousness rejections of claims 15, 19, and 20 are improper because the nonobviousness of independent claims 1 and 17 precludes a rejection of claims 15, 19, and 20 which depend therefrom because a dependent claim is obvious only if the independent claim from which it depends is obvious. *See In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also* MPEP § 2143.03. Therefore, the Applicants request that the Examiner withdraw the 35 U.S.C. § 103(a) obviousness rejection to dependent claims 15, 19, and 20 which depend from allowable independent claims 1 and 17.

No specific references have been applied to claims 22, 23, and 29, therefore applicant presumes these claims are allowable.

ENTRY OF AMENDMENTS

The amendments to claims 17, 24 and 26 above should be entered by the Examiner because the amendments and new claims are supported by the as-filed specification and drawings and do not add any new matter to the application.

CONCLUSION

Claims 1 through 44 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, he is respectfully invited to contact Applicants' undersigned attorney.

Respectfully submitted,



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